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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,837	08/19/2003	Dustin Winters	86564RLO	4903

7590 06/27/2005

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EXAMINER

PATEL, ASHOK

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,837

Applicant(s)

WINTERS ET AL.

Examiner

Ashok Patel

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/19/03; 2/18/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 2879

1. Paragraph 1, lines 4-13 of the specification needs to be updated with respect to cross-reference to related applications.

2. Claims 10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "the transparent electrode" lacks antecedent basis. This term is not mentioned or defined prior in the same claims or any parent claim.

3. Claim 2 is objected to because of the following informalities: claim 2, line 1: the term "in the" should be deleted. Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

Art Unit: 2879

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (USPGPub 2004/0113875) in view of Nakayama et al (EP 0,616,488, submitted by applicant).

Miller et al disclose an OLED device (Figures 2, 4, 7-12) including: an array (as shown in at least Figure 7) of light emitting pixels (12), each pixel including subpixels (20, 22, 24, 26) having organic layers (114) including at least one emissive layer (108) that produces light and spaced electrodes, and wherein there are at least three gamut subpixels (red, green and blue (20, 22, 24) that produce colors which define a color gamut and at least one subpixel (26) that produces (white) light within the color gamut produced by the gamut subpixels, at least one of the gamut subpixels forming a microcavity-structure and including a reflector (cathode electrode 112). At paragraph 0034, Miller et al disclose that the cathode electrode (50, 112) could be a reflector if the light is to be transmitted in a bottom direction.

Miller et al differ from applicant's claimed OLED device in that Miller et al do not disclose the micro-cavity including a semitransparent reflector, as claimed by applicant.

Although, the use of semitransparent reflector is known in the OLED device art for suitably reflecting light to a desired level (depending upon amount of transparency level) in a desired direction, Nakayama et al is cited for showing the OLED in which a microcavity structure (102-106 in Figures 1, 3) including a semitransparent reflector (electrode 102) (in addition to a reflector, electrode 106) for reflecting the light to a desired level in a desired (bottom) direction.

Therefore it would have been obvious to one of ordinary skill in the art to provide Miller et al's OLED device including the Nakayama et al's microcavity structure having semi-transparent reflector) for reflecting the light to a desired level in the desired (bottom) direction.

As to claim 2, as mentioned earlier, Miller et al disclose, at paragraph 0034, the reflector (50, 112) in the form of electrode (cathode), if the light is to be transmitted from the substrate (30) i.e. in the bottom direction.

As to claim 3, as mentioned earlier, Nakayama et al disclose the semi-transparent reflector (40, 102) as an electrode (anode) for reflecting the light to a desired level. The semi-transparent reflector (40, 102) also serves as electrode.

Therefore it would have been obvious to one of ordinary skill in the art to provide Miller et al's OLED device including

the Nakayama et al's microcavity structure having semi-transparent reflector as electrode for reflecting the light to a desired level in the desired (bottom) direction.

As to claim 4, Miller et al disclose the gamut subpixel producing red, green and blue colors, and the within sub-pixel producing white color (para. 0034, 0116, 0117; Figures 2 and 8-12).

As to claim 5, initial light emission from the organic layers is of broadband nature and is common to all subpixels of the all the pixels. When the OLED device emits red, green and red light the initial broadband emission converts into narrowband emission.

As to claim 6, Miller et al disclose the OLED device including at least one filter element (paragraph 0030-0033 etc.).

As to claims 7 and 8, Miller et al teaches that his invention could be employed in active or passive matrix devices (paragraph 0029; claims 9, 35).

As to claims 9 and 11, Miller et al do not disclose the OLED device including (all or all but one) gamut subpixel having a transparent cavity-spacer layer. Nakayama et al disclose the transparent cavity-spacer layer (107) having suitable thickness and refractive index. At col. 5, lines 27-29, Nakayama et al disclose that optical length of the micro-structure subpixel could be changed by the transparent cavity-spacer layer.

Art Unit: 2879

Therefore it would have been obvious to one of ordinary skill in the art to provide Miller et al's OLED device including the Nakayama et al's microcavity structure having transparent cavity-spacer layer of all or some micro-structure subpixels for adjusting their optical lengths to a desired level.

As to claim 10 and 12, neither Miller et al nor Nakayama et al disclose the transparent-cavity spacer layer made of material and thickness same as the transparent electrode (semi-transparent reflector electrode (102)). However since any known suitable material with appropriate structure could be employed for the transparent cavity-spacer layer, so long as it does not deter the light transmission properties. In light of this, Nakayama et al would have suggested to use the transparent cavity-spacer layer of any suitable material and structure.

As to claims 13 and 14, Miller et al disclose (at least in Figures 4 and 7) one or more organic layers separately patterned for one or more subpixels.

As to claim 15, since language of this claim is substantially similar to that claim 5, this claim is rejected for reasons set forth in the rejection of claim 5.

As to claims 16 and 17, Miller et al disclose the device being top or bottom emitting (paragraphs 0034 and 0034)


Art Unit: 2879

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cok et la, Cok et al and Lim et al each are cited for showing a general structure of an OLED device, which is similar to applicant's OLED device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ashok Patel
Primary Examiner
Art Unit 2879